MPE Test Report

Report No.: MTi210608015-02E3

Date of issue: July 20, 2021

Applicant: Zhuhai Quyin Technology Co., Ltd.

Product name: Label Printer

Model(s): B246DB, K4BT, B246DBT, PM-246S-BT, AM-246S-BT, K1BT, K2BT, K3BT, K5BT, K6BT, K7BT, K8BT, PM-241, AM-241, AM-242, PM-241-BT, PM-242-BT, PM-243-BT, AM-241-BT, AM-242-BT, AM-243-BT, PM-242, PM-243, AM-241

FCC ID: 2ASRB-B246D

Shenzhen Microtest Co., Ltd.

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Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
4. This report is invalid if transferred, altered or tampered with in any form without authorization;
5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

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TEST RESULT CERTIFICATION

Applicant's name.....	Zhuhai Quyin Technology Co., Ltd.
Address.....	ROOM201, 2ND FLOOR, BLG2, NO.1 CUIZHU 4 STREET, QIANSHAN, XIANGZHOU DISTRICT, ZHUHAI CITY
Manufacturer's Name ..	Zhuhai Quyin Technology Co., Ltd.
Address.....	ROOM201, 2ND FLOOR, BLG2, NO.1 CUIZHU 4 STREET, QIANSHAN, XIANGZHOU DISTRICT, ZHUHAI CITY
Factory's Name	Zhuhai Ektouch Technology Co., Ltd.
Address.....	1.3.4.5.6.7F, Block B, No.1, Cuizhu 4# Street, Cuizhu Industrial Zone, Zhuhai City, Guangdong
Product description	
Product name.....	Label Printer
Trademark	N/A
Model Name	B246DB
Serial Model	K4BT, B246DBT, PM-246S-BT, AM-246S-BT, K1BT, K2BT, K3BT, K5BT, K6BT, K7BT, K8BT, PM-241, AM-241, AM-242, PM-241-BT, PM-242-BT, PM-243-BT, AM-241-BT, AM-242-BT, AM-243-BT, PM-242, PM-243, AM-241
Standards.....	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests… :	June 25, 2021 ~ July 01, 2021
Test Result.....:	Pass

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Testing Engineer : Danny Xu

(Danny Xu)

Technical Manager : Leo Su

(Leo Su)

Authorized Signatory : Tom Xue

(Tom Xue)

1 RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

1.1 Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, 1mW/cm2. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

1.2 Measurement Result

Operation Frequency: BT GFSK, π/4-DQPSK, 8DPSK: 2402-2480MHz

Power density limited: 1mW/ cm^2

Antenna Type: BT Antenna: PCB Antenna;
BT antenna gain: 2dBi

R=20cm

mW=10^(dBm/10)

antenna gain Numeric=10^(dBi/10)= 10^(2/10)=1.58

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	-3.430	-4±1	-3	0.501	2	1.58	0.0002	1
2441		-3.265	-4±1	-3	0.501	2	1.58	0.0002	1
2480		-4.894	-4±1	-3	0.501	2	1.58	0.0002	1
2402	π/4-DQPSK	-0.840	0±1	1	1.259	2	1.58	0.0004	1
2441		-0.642	0±1	1	1.259	2	1.58	0.0004	1
2480		-0.525	0±1	1	1.259	2	1.58	0.0004	1
2402	8DPSK	-0.921	0±1	1	1.259	2	1.58	0.0004	1
2441		-0.711	0±1	1	1.259	2	1.58	0.0004	1
2480		-0.425	0±1	1	1.259	2	1.58	0.0004	1

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	-3.215	-4±1	-3	0.501	2	1.58	0.0002	1
2440		-3.102	-4±1	-3	0.501	2	1.58	0.0002	1
2480		-4.769	-4±1	-3	0.501	2	1.58	0.0002	1

Conclusion:

For the max result: BT: 0.0004≤ 1.0, BLE: 0.0002≤ 1.0for 1g SAR, No SAR is required.

----END OF REPORT----